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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,496	09/22/2003	Zhiqiang Wei	0020-5179P	6865
2292	7590	10/17/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			PARKER, FREDERICK JOHN	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	

1762

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,496

Applicant(s)

WEI ET AL.

Examiner

Frederick J. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8-22-06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 22 is vague and indefinite because there is no nexus between the “applying” and “soaking” steps, and the preamble so that it is unclear how the limitations regarding “A” are related to the metallic element/s of the “applying” step. Put another way, while the limitations regarding “A” of the soaking step appear to have a relation to the ABO_3 of the preamble, the “applying” step merely requires applying a sol gel containing an element/s of the metal oxide in the preamble but not necessarily identical to those of the “soaking” step, allowing the latter to add “A” material which may be different. For interpretation then, the soaking step is permitted to have/add the same or additional metals as the applying step.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiu '849.

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Qui '849 et al teaches a method for preparing a thin film of metal oxide containing metal elements on a substrate comprising the steps of:

applying a sol-gel solution containing metal elements, such as lead and barium (col. 9, lines 13-17; col. 16, lines 1-8) to a surface of said substrate (col. 9, lines 7-50);

drying said sol-gel solution to prepare a dried gel film on said substrate (col. 9, lines 51-67);

soaking said dried gel film on said substrate in an alkaline aqueous solution containing barium (col. 10, lines 9-22) or lead (col. 10, lines 51-64) in a container;

sealing the container (The container must be sealed in order to achieve desired super-atmospheric pressures (col. 10, lines 23-64).); and

performing hydrothermal treatment for said dried gel film on said substrate in the sealed container to prepare said thin film of metal oxide on said substrate (col. 10, lines 9-64). The hydrothermal treatment promotes crystallization of the metal containing film at lower temperatures than by conventional sintering methods.

Claim 23: the ABO_3 structure is commonly lead titanate to which is added an aqueous alkaline solution of Ba so the ultimate metal oxide film comprises Ba and Ti (col. 10,13-19).

Claim 24-27; in view of col. 16, 62-67 and figure 7, claim 24 would have been an obvious variation within the purview of one skilled in the art because the compositions are well-known.

Claims 28-29: The temperature may be 140 °C (col. 10, lines 27-28). The subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made if the overlapping portion of the temperatures disclosed by the reference were selected because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Wortheim* 191 USPQ 90.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Qui'849 to form single or multiple metal precursor films based on the perovskite structure given the overall teachings of Qui '849 because

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of the expectation of forming a well-crystallized thin film of metal oxide of only one, or more, metallic A element.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiu '849 and further in view of Lee et al. (U.S. Patent 5,763,092, hereafter '092).

Qiu '849 is cited for the same reasons previously discussed, which are incorporated herein.

'849 does not explicitly teach boiling the alkaline aqueous solution before soaking. '849 teaches that its hydrothermal process occurs to replace atoms in the structural lattice with other desired atoms (col. 3, lines 26-61) in order to obtain a particularly desired (perovskite) crystal structure. However, '092 teaches that hydrothermal treatment solutions used to treat oxide films may be boiled in order to avoid the undesirable incorporation of carbon into the films (col. 5, lines 40-59). Therefore, taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Qui'849 by boiling the hydrothermal treatment solution before immersing the substrate as taught by Lee et al in order to have avoided the incorporation of carbon contamination into the oxide film.

Response to Arguments

Applicants arguments have been considered. The gist is that Applicants have now amended claims so that only the element/s "A" in the ABO_3 structure of the film formed are included in the hydrothermal treatment. Applicants argue the element "A" of the prior art may not be included. The Examiner disagrees with Applicants, their claim 22 being subject to multiple interpretations differing from that of Applicants arguments. Hence the claim is rejected as

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indefinite under 35 USC 112/ 2nd and rejected using previous prior art with explanation of the Examiner's interpretation provided.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick J. Parker whose telephone number is 571/ 272-1426. The examiner can normally be reached on Mon-Thur. 6:15am -3:45pm, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571/272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Frederick J. Parker
Primary Examiner
Art Unit 1762

fjp